Subsistence Fisheries before and after the *Exxon Valdez* Oil Spill

Upcoming Special Publication by the Society of Environmental Toxicology and Chemistry

Evaluating and Communicating Subsistence Seafood Safety in a Cross-Cultural Context: Lessons Learned from the Exxon Valdez Oil Spill

Senior editor: L. Jay Field, Office of Response & Restoration

The *Exxon Valdez* oil spill caused many residents of Prince William Sound, Lower Cook Inlet, and Kodiak Island villages to question whether their traditional subsistence shellfish, fish, and marine mammal resources were contaminated with oil from the spill and no longer *safe to eat. This book, to be published Spring 1999—the ten-year anniversary of the Exxon Valdez* oil spill—discusses the efforts to address the human-health effects of the disaster on the subsistence-based native Alaskans for whom the spill area in and around Prince William Sound has been their physical and spiritual home for thousands of years.

The Alaska Oil Spill Health Task Force was formed shortly after the spill to address the concerns of communities in the spill's path about the safety of their subsistence seafood resources. This Task Force--chaired by an Indian Health Service physician and composed of representatives from NOAA and other state and Federal agencies, native organizations, and Exxon--met regularly for the next three years to gather information, review sampling strategy and analytical data, assess health implications of the levels of oil-related contaminants observed in subsistence resources, and to determine the best ways to communicate the results and their implications to the native communities. As part of this process, a multidisciplinary committee of nationally recognized experts was convened by NOAA to review the data, identify information gaps, and recommend ways to improve the knowledge base and the quality of public health advice.

This monograph documents the Task Force's overall response to the multidisciplinary issues surrounding subsistence food safety, most importantly the cross-cultural approaches to risk analysis and risk communication. The contributors to this book share their first-hand experiences in tackling the questions of subsistence seafood safety arising from the spill and the important lessons learned. The chapters examine the following issues from several disciplinary perspectives:

- the historical importance of subsistence resources to native communities in the areas affected by the spill, and subsequent changes in patterns of subsistence use following the spill;
- the Task Force's response to concerns about subsistence seafood safety, emphasizing the questions raised by the native communities and the decision-making process that subsequently unfolded;
- how the social and psychological effects of the spill on the subsistence villagers complicated the Task Force's efforts to build mutual trust and maintain effective communication;
- the interactions among Exxon, the Task Force, and the native communities over subsistence seafood issues from the point of view of Exxon's primary liaison with the villages;
- the sampling strategy and analytical approaches used to determine the degree of contamination in important subsistence harvest areas and resources;

• the results and implications of the three-year laboratory analysis of aromatic-hydrocarbon residue in shellfish, fish, and marine mammals;

• the quantitative assessment of the human health risk of consuming petroleum-contaminated seafood, based on harvest data and laboratory analyses of the subsistence seafood samples;

• a discussion of the risk-communication methods used and an analysis of their effectiveness in addressing the villagers' concerns about subsistence seafood safety, particularly given the cross-cultural context; and

• the lessons learned from the Task Force's response efforts, and its recommendations for confronting the gaps in knowledge and understanding--both scientific and sociological--that continue to hinder post-spill efforts to address the specific seafood safety questions of a local populace.

Despite the major oil spills that have occurred before and since the *Exxon Valdez*, there is still little hard data on the risks to human health of consuming oil-contaminated foods. There is also confusion about how, within a crisis atmosphere and a cross-cultural setting, to most effectively analyze these risks and communicate them to a local populace that is highly dependent on subsistence resources both as a source of protein and a way of life.

The potential worldwide for future spills that could directly affect local subsistence communities is significant. Our goal in this monograph is to keep history from repeating itself, spill after spill, by transmitting the experiences and difficult lessons from the largest oil spill in U.S. history and the only U.S. spill to affect a subsistence-based populace. These detailed discussions are relevant to anyone interested in the issues and processes of risk analysis and risk communication. Most urgently, however, this book is intended to provide valuable historical lessons to help spill-response and public-health professionals anticipate and prepare for similar challenges at future oil spills.

For additional information send e-mail to:
j.field@hazmat.noaa.gov
or call: 206/526-6317

U.S. Department of Commerce

National Oceanic and Atmospheric Administration • National Ocean Service

William M. Daley
Secretary, U.S. Department of Commerce

D. James Baker, Ph.D.
Under Secretary of Commerce for Oceans and Atmosphere and Administrator, National Oceanic and Atmospheric Administration

Terry D. Garcia
Assistant Secretary of Commerce for Oceans and Atmosphere and Deputy Administrator, National Oceanic and Atmospheric Administration

Nancy Foster, Ph.D.
Assistant Administrator for Ocean Services and Coastal Zone Management, NOAA National Ocean Service

March 1999